

# NIH Workshop on Reproducibility in Cell Culture Studies

Broadcast live at <http://videocast.nih.gov>

Rich Neve, Gilead Sciences (Chair)

Jamie Almeida, NIST • Parker Antin, FASEB/University of Arizona • Dorit Berlin, Coriell •  
Jesse Boehm, Broad Institute • Anne Carpenter, Broad Institute • John Elliot, NIST • Amy Herr, University of  
California Berkeley • Jim Hicks, Cold Spring Harbor Labs • Rick Horwitz, Allen Institute for Cell Science •  
Anna Huttenlocher, University of Wisconsin School of Medicine • Jim Inglese, NCATS • Rick Lalonde, Pfizer •  
Roland Nardone, Catholic University of America • Scott Noggle, New York Stem Cell Foundation • Anne Plant,  
NIST • Yvonne Reid, ATCC • David Rimm, Yale • Jean Schwarzbauer, Princeton University • Shai Silberberg,  
NINDS • Susan Solomon, New York Stem Cell Foundation • John Weinstein, MD Anderson Cancer Center •  
Tracy Young-Pearse, Brigham and Women's Hospital, Harvard Medical School

## Day 1

Monday, September 28

8:30-9:25

### Opening Remarks

Introduction

Larry Tabak, Principal Deputy Director, NIH

Historical perspective on reporting and rigor in animal studies

Shai Silberberg, Investigator and Program Director, NINDS

Historical perspective on cell line misidentification

Roland Nardone, Professor Emeritus, Catholic Univ. of America

Overview of workshop goals

Richard Neve, Senior Research Scientist, Gilead Sciences, Inc.

9:25-10:20

### Cell Line Identification

Cell line misidentification and reproducibility

Technology and authentication

Chair, Yvonne Reid

Panelists: Jamie Almeida • Dorit Berlin • Anna Huttenlocher • Roland Nardone •  
Jean Schwarzbauer • Scott Noggle • Tracy Young-Pearse

10:20-10:30

### Break

- 10:30-11:30      **Cell Line Divergence and Heterogeneity**  
Genomic divergence, heterogeneity, and profiling  
Chair, Richard Neve  
Single cell sequencing  
Chair, James Hicks  
Emerging 'omic and computational approaches  
Chair, John Weinstein  
Panelists: Dorit Berlin • Jesse Boehm • John Elliot • Jim Inglese • Roland Nardone
- 11:30-12:10      **Phenotypic Heterogeneity and Profiling**  
Phenotypic heterogeneity and profiling  
Chair, Anne Carpenter  
New approaches for assessing health and heterogeneity  
Chair, Anne Plant  
Panelists: Jesse Boehm • John Elliot • Anna Huttenlocher • Jim Inglese • David Rimm • John Weinstein
- 12:10-1:00      **Lunch**
- 1:00-2:00      **Research Practice**  
Impact of research practice on cell lines  
Chair, Tracy Young-Pearse  
Cellular assays  
Chair, Jesse Boehm  
Panelists: Dorit Berlin • John Elliot • Jim Inglese • Anne Plant • Yvonne Reid • Scott Noggle
- 2:00-3:00      **Reagents**  
Media, serum, and supplements  
Chair, Jean Schwarzbauer  
Antibodies and chemicals  
Chair, David Rimm  
Panelists: Dorit Berlin • Amy Herr • Jim Inglese • Anne Plant • Yvonne Reid • Tracy Young-Pearse

**Day 1 (continued)****Monday, September 28**

3:00-3:15

Break

3:15-4:15

**Emerging Challenges and Opportunities in Cell Culture Research**

Challenges: Stem cells and engineered environments

Chair, Susan Solomon

Panelists: Jesse Boehm • Anne Carpenter • Amy Herr • Jim Hicks • Rick Lalonde  
Yvonne Reid • John Weinstein

Opportunities: Improving cell models and translation

Chair: James Inglese

Panelists: Jesse Boehm • Anne Carpenter • Jim Hicks • Rick Horwitz •  
Anna Huttenlocher • Jean Schwarzbauer • John Weinstein

4:15-5:00

**Summary and Discussion**

Chair: Richard Neve

Panelists: Parker Antin • Rick Horwitz • Anna Huttenlocher • Rick Lalonde •  
Jean Schwarzbauer • John Weinstein • Tracy Young-Pearse**Day 2****Tuesday, September 29**

8:30-8:45

**Overview of Workshop Goals, Progress**

Chair: Richard Neve

8:45-9:20

**Research Practice and Reproducibility**

Chair: Amy Herr

Panelists: Dorit Berlin • Jim Hicks • Jim Inglese • Anne Plant • David Rimm •  
Scott Noggle • Tracy Young-Pearse

9:20-9:50

**Research Standards and Training**

Chair: Anna Huttenlocher

Panelists: Dorit Berlin • Jim Hicks • Jim Inglese • Anne Plant • David Rimm •  
Scott Noggle • Tracy Young-Pearse

9:50-10:25

**Research Standards and Guidance for Cell Studies**

Chair: Parker Antin

Panelists: John Elliot • Amy Herr • Jim Hicks • Anne Plant • Yvonne Reid •  
David Rimm • Scott Noggle

10:25-10:40

Break

10:40-11:15

Reporting Standards for Cell Studies

Chair: Parker Antin

Panelists: Stefano Bertuzzi • Anne Carpenter • Amy Herr • Rick Horwitz •  
David Rimm • Shai Silberberg • Sowmya Swaminathan •  
Hashi Wijayatilake

11:15-12:30

Summary and Discussion

Chair: Richard Neve

Panelists: Anne Carpenter • Amy Herr • Rick Horwitz • Anna Huttenlocher •  
Jean Schwarzbauer • Shai Silberberg • Tracy Young-Pearse